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[MED 33: Utensils, Cutlery and Domestic Hardware]

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Indian Standard

SPECIFICATION FOR CULINARY MEASURES FOR HOUSEHOLD PURPOSES

(First Revision)

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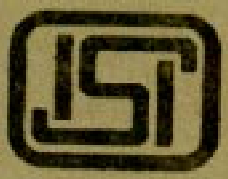

INDIAN STANDARDS INSTITUTION
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Indian Standard

SPECIFICATION FOR CULINARY MEASURES FOR HOUSEHOLD PURPOSES

(First Revision)

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Indian Standard

SPECIFICATION FOR CULINARY MEASURES FOR HOUSEHOLD PURPOSES

(First Revision)

0. FOREWORD

0.1 This Indian Standard (First Revision) was adopted by the Indian Standards Institution on 30 September 1980, after the draft finalized by the Cutlery Sectional Committee had been approved by the Consumer Products and Medical Instruments Division Council.

0.2 The work of formulating standard on culinary measures for household purposes was taken up at the instance of the Terminology and Measurement Standardization Committee of the Home Science Association of India.

0.3 This standard was first published in 1974 and it included the measuring spoons and measuring cups of standard capacities. Need has been felt, however, to include the requirements for a metric cup having 250 ml useful capacity which could be specially suited for measuring liquids. Accordingly, this revision has been undertaken to include a standard cup for measuring liquids whereas the fractional cup measures covered in this revision are suited to measure the volume of powdered and dry ingredients. It also includes spoons of measuring capacity up to 20 ml.

0.4 Because of the difference in relative densities of ingredients, the measures are based on volumetric measure, but this does not inhibit their use for both liquids and solids as specified in any particular recipe.

0.5 This specification covers only the features, which affect the performance, and are controllable by the tests specified. The design and materials from which these measures can be made have been left to the individual manufacturer.

0.6 These measures are designed for non-commercial measurements used in preparing culinary items.

0.7 In revising the standard, assistance has been derived from AS 1325-1972 Metric Measuring Cups and Spoons and Standard Litre Measure for Domestic Purposes, issued by the Standards Association of Australia.

0.8 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

SECTION 1 GENERAL

1. SCOPE

1.1 This standard covers essential requirements for standard measuring spoons and cups used in culinary art.

2. TERMINOLOGY

2.0 For the purpose of this specification, the following definitions shall apply.

2.1 Standard Spoon — A spoon used in culinary art for measuring the volume of ingredients and whose levelled capacity is 5 ml.

2.2 Fractional Cups Measures — Cups used in culinary art for measuring the volume of powdered and dry ingredients, whose levelled capacity is 250 ml or fractions thereof.

2.3 Standard Cup (Liquid) Measure — A cup used in culinary art for measuring the volume of liquid ingredients in terms of 'cup' and fractions of a 'cup'.

2.3.1 The term 'cup' shall be taken as being equal to 250 ml.

3. MATERIALS

3.1 The measures shall be made of materials suitable for prolonged contact with foodstuffs.

3.1.1 The materials used in the manufacture of measures shall not contain substances known to be toxic and which are capable of extraction from the measures, in significant quantities, by contact with foodstuffs or by water or steam.

*Rules for rounding off numerical values (*revised*).

4. TESTS

4.1 Boiling Water Test — The measure shall be immersed totally in water at 100 ± 0·5°C for two minutes, and then removed and allowed to cool to room temperature. After the test there shall be no visible deformation of measure, the capacity shall still conform to appropriate value specified in separate sections, within the tolerance of ± 5 percent and the boiling water used shall not have any objectionable taint.

4.2 Staining Test — The measure, when immersed totally for 16 hours in each of the following solutions at room temperature, shall not show any sign of staining after removal from solution, at the end of the above period:

a) Ten grams of glacial acetic acid (99 percent) dissolved in distilled water to make 100 ml, and

b) Five grams of pure sodium chloride dissolved in distilled water to make 100 ml.

5. FINISH

5.1 The surfaces of the measures, including the handle, shall be smooth and free from cracks or other imperfections, and all edges shall be rounded off in a manner appropriate to the material of construction.

6. PACKING

6.1 The measures shall be packed in accordance with the best trade practices.

SECTION 2 MEASURING SPOONS

7. CAPACITY

7.1 The levelled capacity of the spoons shall be as follows, subject to a tolerance of ± 5 percent on the volume:

Standard Spoon	*Capacity, ml*
4	20
3	15
2	10
1	5
½	2·5
¼	1·25

8. SHAPE AND DIMENSIONS

8.1 The shape and dimensions of the spoons shall be such as will permit easy filling and emptying and all the surfaces of the spoon shall be easily accessible for cleaning by normal domestic procedures.

8.2 The minimum length of handles shall normally be 100 mm. Alternatively, a short handle not exceeding 50 mm in length and suitable width may be provided, if desired by the purchaser.

8.3 If desired by the purchaser, a hole of 5 mm minimum diameter shall be provided in the handle to facilitate hanging.

8.3.1 A connecting ring made of non-corrosive material may be provided, if desired by the purchaser to make a set of six spoons described in **7.1**.

8.4 If desired by the purchaser, a double-ended spoon may be constructed having measuring capacities corresponding to any two of the capacities specified in **7.1**.

8.4.1 In case of the double-ended spoon, the centre-to-centre length shall be not less than 100 mm. Smaller handle spoons shall not be made into double-ended.

9. REQUIREMENTS

9.1 Spoons shall be of sufficient strength and rigidity to withstand ordinary usage without readily becoming bent, indented, distorted or otherwise damaged.

9.2 Preferably, it shall be possible to rest individual spoons on a horizontal surface without spilling the contents.

10. MARKING

10.1 Each spoon shall be clearly and permanently marked on the handle with the following:

a) On the upper surface of the handle, capacity of the spoon expressed as follows:

Spoon	*Marking*
4 Standard spoon	4 Standard spoon or 4 Standard, 20 ml
3 Standard spoon	3 Standard spoon or 3 Standard, 15 ml
2 Standard spoon	2 Standard spoon or 2 Standard, 10 ml
1 Standard spoon	1 Standard spoon or 1 Standard, 5 ml
½ Standard spoon	½ Standard spoon or ½ Standard, 2·5 ml
¼ Standard spoon	¼ Standard spoon or ¼ Standard, 1·25 ml

b) On the underside of the handle, the name or trade-mark of the manufacturer and letters 'SS' if stainless steel has been used.

10.1.1 In case of transparent materials the marking on either side shall not overlap.

10.2 The spoons may also be marked with the ISI Certification Mark on the upper surface of the handle.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

SECTION 3 FRACTIONAL CUP MEASURES

11. CAPACITY

11.1 The levelled capacity of the cups shall be as follows, subject to a tolerance of ± 5 percent on the volume:

Cup	*Capacity*	
	ml	Standard Spoons
1	250	50
4/5	200	40
3/5	150	30
1/2	125	25
2/5	100	20
1/5	50	10

12. SHAPE AND DIMENSIONS

12.1 Cross Section — Cups shall be of circular cross section with the sides tapering towards the base, such that slop lies between 0·5° and 9° as shown in Fig. 1.

12.2 Internal Corners — The junction of the walls and base shall be rounded off to a radius of not less than 6·5 mm.

12.3 Stability — The ratio of the height *B* to the base diameter *A* shall not be in excess of 2 to 1 (*see* Fig. 1).

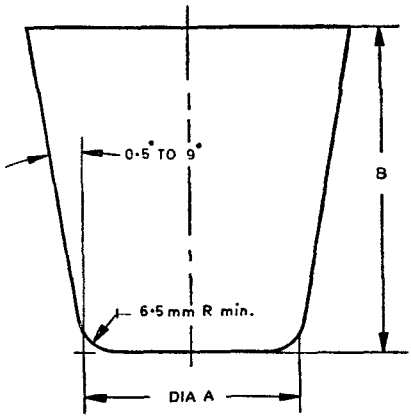

FIG. 1 FRACTIONAL CUP MEASURE

12.4 Rim — If desired by the purchaser, the rim of the cup may be provided with an outer reinforcing ring integral with the body of the cup. An internal reinforcing ring shall not be used.

13. FEATURES

13.1 Cups shall be of sufficient strength and rigidity to withstand ordinary usage without readily becoming bent, indented, distorted or otherwise damaged.

13.2 Handles — The handle of each of the measure shall have a minimum length of 25 mm and shall extend from the top edge of the measure in such a way that the measures shall fit neatly inside each other.

13.2.1 The handles shall be of such strength and shape that they can be firmly, comfortably and safely held and shall not break or deform in domestic use.

13.2.2 If desired by the purchaser, a hole of 10 mm minimum diameter may be provided in the handle to facilitate hanging.

13.3 If desired by the purchaser, the 1-cup measure may be subdivided by graduation marks into 4/5, and 1/5 cup on one side, 3/5 and 2/5 cup on the other side of the circumference and 1/2 cup in between the two and the same shall be marked above the graduation line. The indentations of graduation lines shall be visible from inside to facilitate accurate measurements. No other markings shall show up on the inside of the cup.

14. MARKING

14.1 Each cup shall be clearly and permanently marked with the following:

a) Capacity of cups expressed as below:

Cup	*Marking*
1 Standard cup	1 cup-250 ml
4/5 Standard cup	4/5 cup-200 ml
3/5 Standard cup	3/5 cup-150 ml
1/2 Standard cup	1/2 cup-125 ml
2/5 Standard cup	2/5 cup-100 ml
1/5 Standard cup	1/5 cup-50 ml

b) The name or trade-mark of the manufacturer and letters 'SS' if stainless steel has been used.

14.2 The cups may also be marked with the ISI Certification Mark (*see* Note *under* **10.2**).

SECTION 4 STANDARD CUP (LIQUID) MEASURE

15. MATERIAL AND CAPACITY

15.1 The standard cup (liquid) measure shall be made of transparent material.

15.2 The useful capacity of the standard cup measure shall be 250 ml.

16. SHAPE AND DIMENSIONS

16.1 The standard cup shall be of circular cross section with the sides tapering towards the bottom with a slope between 0·5° to 9°. The junction of the inside surfaces of the side and base shall be curved, with the radius of not less than 6·5 mm blending smoothly into the surfaces. The ratio of

height *B* to the base dia *A* shall be not more than 2 to 1. Other dimensions at the cup shall be as shown under:

External base diameter	60 mm *Min*,
Internal diameter at bottom of taper	40 mm *Min*, 60 mm *Max*
Internal dia at 250 ml marking	75 mm *Min*, 85 mm *Max*
Lowest point of the lip and top edge above 250 ml marking	15 mm *Min*

16.2 Rim — If desired by the purchaser, the rim of the cup may be provided with an outer reinforcing ring integral with the body of the cup.

17. FEATURES

17.1 The cup shall be of sufficient strength and rigidity to withstand ordinary usage without readily becoming bent, indented, distorted or otherwise damaged.

17.2 Handle — A close type handle shall be provided which shall be of such strength that it can be held firmly, comfortably and safely.

17.3 Lip — There shall be at least one pouring lip directly opposite the handle.

17.4 The cup shall be easy to clean and shall be so made as not to afford lodging places for food. The surfaces of the cup, including the handle shall be free from cracks or other imperfection, and all edges and corners shall be rounded off smoothly in a manner appropriate to the material of construction.

18. GRADUATION

18.1 The graduations and markings shall be shown on opposite sides of the cup, in the manner indicated in Fig. 2.

18.2 The standard cup shall be accurately graduated as follows:

a) A continuous top line marking around the cup at the 250 ml level with an unmarked vertical panel of 10 mm minimum width placed centrally on opposite sides of the cup and extending downwards from the continuous line. The graduation line for a 'cup' (250 ml) shall be below the contour of pouring lip provided in the measure.

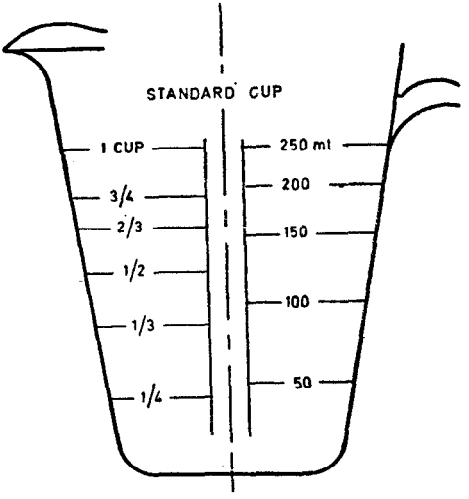

FIG. 2 STANDARD CUP MEASURE

b) Numerals and graduation marks to show 1 standard cup 3/4, 2/3, 1/2, 1/3 and 1/4 placed in the centre of lines which extend from the side of vertical unmarked panel around the pouring side of the measure to meet the vertical unmarked panel on the opposite side.

c) Numerals and graduation marks to show 250 ml, 200, 150, 100 and 50, placed in the centre of short lines which extend from the side of the vertical unmarked panel on the handle side of the measure.

The maximum permissible error in content at any graduation mark shall be $\pm$ 5 percent and the setting shall be made at the top edge of graduation mark.

18.3 Inscriptions — The standard cup shall be permanently marked on opposite sides of the cup with appropriate words and abbreviations to indicate clearly the scales for cups and millilitres. Numerals and words may be on either the inside surface or the outside surface but must be capable of being read from outside of the cup. The numerals and words shall be so located with respect to the graduation marks that there is no possibility of confusion.

19. MARKING

19.1 The standard cup shall be clearly and permanently marked with the name or trade-mark of the manufacturer.

19.1.1 The cup may also be marked with the ISI Certification Mark (*see* Note *under* **10.2**).

INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

Base Units

Quantity	Unit	Symbol
Length	metre	m
Mass	kilogram	kg
Time	second	
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

Quantity	Unit	Symbol
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

Quantity	Unit	Symbol	Definition
Force	newton	N	1 N = 1 kg.m/s^2
Energy	joule	J	1 J = 1 N.m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V.s
Flux density	tesla	T	1 T = 1 Wb/m^2
Frequency	hertz	Hz	1 Hz = 1 c/s (s^{-1})
Electric conductance	siemens	S	1 S = 1 A/V
Electromotive force	volt	V	1 V = 1 W/A
Pressure, stress	pascal	Pa	1 Pa = 1 N/m^2

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